

**Notice of Allowability**

Application No.

09/331,204

Applicant(s)

TAM, ROBERT

Examiner

Art Unit

J. D. Schultz, Ph.D.

1635

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10 February 2005.
2. ☒ The allowed claim(s) is/are 12,14,15,17 and 19-25.
3. ☒ The drawings filed on 10 February 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**J.D. SCHULTZ, Ph.D.**  
**PATENT EXAMINER**

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James Demers on October 28, 2004.

The application has been amended as follows:

In the claims,

Claims 1-11 (Canceled).

Claim 12 (Currently amended). An aptamer having a length of ~~between 13 and~~ no more than 22 ~~nucleic acid units, inclusive,~~ nucleotides and having ~~[[a]] the sequence which includes at least~~ two G-rich regions selected from the group consisting of G~~G~~nG, GGGG, G~~n~~GG, ~~n~~GGG and GGG~~n~~, where G is deoxyguanosine and n is any nucleotide, and wherein the nucleic acid units in the aptamer and the at least two G-rich regions are selected such that the aptamer reduces CD28 expression in an activated human T-cell and wherein the aptamer has the sequence 5' GGG GAG GAG GGG CTG GAA 3' (Seq. Id. No. 5) (SEQ ID NO: 5).

Claim 13 (Canceled).

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Claim 14 (Currently amended). An aptamer having a length of ~~between 13 and~~ no more than 22 ~~nucleic acid units, inclusive,~~ nucleotides and having ~~[[a]] the sequence which includes at least~~ two G-rich regions selected from the group consisting of GGnG, GGGG, GnGG, nGGG and GGGn, where G is deoxyguanosine and n is any nucleotide, and wherein the nucleic acid units in the aptamer and the at least two G-rich regions are selected such that the aptamer reduces CD28 expression in an activated human T-cell and wherein the aptamer has the sequence 5' TTG GAG GGG GAG GAG GGG 3' (~~Seq. Id. No. 7~~) (SEQ ID NO: 7).

Claim 15 (Currently amended). An aptamer having a length of ~~between 13 and~~ no more than 22 ~~nucleic acid units, inclusive,~~ nucleotides and having ~~[[a]] the sequence which includes at least~~ two G-rich regions selected from the group consisting of GGnG, GGGG, GnGG, nGGG and GGGn, where G is deoxyguanosine and n is any nucleotide, and wherein the nucleic acid units in the aptamer and the at least two G-rich regions are selected such that the aptamer reduces CD28 expression in an activated human T-cell and wherein the aptamer has the sequence 5' TTG GAG GGG GAG GTG GGG 3' (~~Seq. Id. No. 8~~) (SEQ ID NO: 8).

Claim 16 (Canceled).

Claim 17 (Currently amended). A method of ~~medicating~~ treating an isolated immunocompetent cell, comprising administering to the cell an aptamer at a concentration effective to reduce CD28 expression, wherein the aptamer has a length of ~~between 13 and 22 nucleic acid units inclusive,~~ and having a sequence which includes at least two G-rich regions selected from the group

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~~consisting of GGnG, GGGG, GnGG, nGGG and GGGn, where G is deoxyguanosine and n is any nucleotide, and wherein the nucleic acid units in the aptamer and the at least two G-rich regions are selected such that the aptamer reduces CD28 expression in an activated human T-cell.~~ is selected from the group consisting of SEQ ID NO: 5, SEQ ID NO: 7, and SEQ ID NO: 8.

Claim 18 (Canceled).

19. (Previously presented). The method of claim 17 wherein the immunocompetent cell is from a patient suffering from a graft vs host response.

20 (Previously Presented). The method of claim 17 wherein the immunocompetent cell is from a patient suffering from an autoimmune disease.

21. (Previously Presented). The method of claim 20 wherein the autoimmune disease comprises rheumatoid arthritis.

22. (Previously presented). The method of claim 20 wherein the autoimmune disease comprises multiple sclerosis.

23 (Previously presented). The method of claim 20 wherein the autoimmune disease comprises lupus erythematosus.

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24. (Previously Presented). The method of claim 20 wherein the autoimmune disease comprises insulin dependent diabetes mellitus.

25 (Previously Presented). The method of claim 20 wherein the autoimmune disease comprises psoriasis.

The specification has been amended as follows:

Please insert the following as the first sentence at page 1 of the specification;

This application claims the benefit of U.S. provisional application No. 60/034,509, filed 27 December 1996.

### ***Conclusion***

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Douglas Schultz, Ph.D. whose telephone number is 571-272-0763. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached at 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

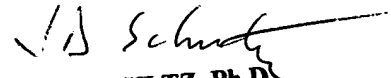
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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

JD Schultz, PhD

  
**J.D. SCHULTZ, Ph.D.**  
**PATENT EXAMINER**